

# Temperature and Humidity


## 1. The controller





**Fig. 1 TEMPERATURE CONTROLLER**


### 1) Keys


**SET:** To display set-point; in programming mode it selects a parameter or confirms an operation.

: To start a manual defrost.


: To see the maximum stored temperature; in programming mode it browses the parameter codes or increases the displayed value.

: To see the minimum stored temperature; in programming mode it browses the parameter codes or decreases the displayed value.



: To turn on/off the power to the unit.

: To lock/unlock the keypad.

**SET+ **: To enter in the programming mode.





**SET+ **: To return to the temperature display.



### 2) Lock and unlock the keys

To lock the keys, press up + down keys  until POF is displayed; to unlock the keys, press up + down keys  until PON is displayed.

### 3) Display

During normal operating conditions, the display shows the value measured by the air temperature probe. In case of active alarm, the temperature flashes alternately to the code alarm. The LED functions are listed as follows.

LED	MODE	FUNCTION
	ON	Compressor enabled
	Flashing	Anti-short cycle enabled
	ON	Defrost cycle enabled
	ON	Fan enabled

	Flashing	Fan delay after defrost enabled
	ON	Alarm occurring
°C/°F	ON	Temperature measuring unit
°C/°F	Flashing	Programming mode

#### 4) Alarm Signals

The alarm codes are described as follows.

MESSAGE	CAUSE	FUNCTION
P1	Temperature probe faulty	Compressor switching to Con and CoF
HA	High temperature alarm	Probe temperature ALU higher than the setting temperature; Outputs unchanged
LA	Low temperature alarm	Probe temperature ALL lower than the setting temperature; Outputs unchanged
CA	External alarm	All outputs off

Probe alarms P1”, start a few seconds after the fault in the related probe; they automatically stop a few seconds after the probe restarts normal operation. Check connections before replacing the probe. Temperature alarms “HA”, “LA” automatically stops as soon as the temperature returns to normal value. Alarm “CA” (with i1F=PAL) recovers only by switching off and on the instrument.



#### 2. Temperature Setting

- Set the temperature at 55 °F for the optimum aging of wine
- On initial start-up, the time required to reach the desired temperature will vary, depending on the quantity of bottles, temperature setting and surrounding temperature.
- Allow 24 hours to stabilize the temperature for each new temperature setting operation

#### 3. How to see temperature set-point

- 1) Press and immediately release the **SET** key, the display will show the set-point value. !
- 2) Press again and immediately release the **SET** key to display the probe value.

#### 4. How to change the set-point








- 1) Press and hold the **SET** key until the “°C” or “°F” LED starts flashing and the set-point is displayed.
- 2) Press the up/down keys / to change the set-point value within 10 sec.
- 3) Press the **SET** key again to store the new set-point value. !

**NOTE:** The unit turns on at set-point **Set** plus regulation differential **Hy** after anti-short cycle **AC** has elapsed; the unit turns off at set-point **Set**. !

## 5. Manual Defrost

Press and hold the defrost ❄️ key until defrost starts. The defrost indicator will be on.

## 6. Parameter Programming

- 1) Press and hold the **SET** +  keys until the “°C” or “°F” LED starts flashing, then release the keys. !
- 2) Press and hold again the **SET** +  keys until the **Pr2** label is displayed, then release the keys. The first parameter **Hy** will be displayed. !
- 3) Press up/down keys / to scroll to the required parameter within 10 sec.
- 4) Press the “**SET**” key to display its value.
- 5) Use up/down keys / to change its value within 10 sec.
- 6) Press “**SET**” to store the new value and the display will flash 3 times.
- 7) **To exit:** Press **SET** +  or wait 15sec without pressing a key.

PARAMETER	DESCRIPTION	DEFAULT VALUE
Set	set-point (°)	55
Hy	temperature regulation differential (°)	4
AC	anti-short cycle delay (min)	10
Con	compress on with probe faulty (min)	15
CoF	compress off with probe faulty (min)	30
CF	temperature unit (°F/°C)	F: Fahrenheit
rES	display resolution	in: integer
dLy	temperature display delay (min)	1
ot	probe calibration (°)	0
LS	minimum set-point (°)	50
US	maximum set-point (°)	65
idF	defrost cycle interval time (hour)	12
MdF	defrost cycle endurance time (min)	30
ALC	temperature alarm type	rE: relative to set-point
ALU	high temperature alarm (°)	10
ALL	low temperature alarm (°)	10
AFH	alarm recovery differential (°)	5
ALd	temperature alarm delay (min)	60
dAO	temperature alarm delay on startup (hr)	23
SAA	heater set-point (°)	40
SHy	heater regulation differential (°)	4
FSU	fan action	Std
FnC	fan operating mode	C-n: on with compressor & off during defrost
Fon	fan on with compressor off (min)	0
FoF	fan off with compressor off (min)	15

**NOTE:** Depending on the controller, not all parameters are used. !

### 7. How to calibrate the air probe

If the actual cellar temperature differs from the setting temperature, set parameter **ot** = actual cellar temperature minus set-point.

### 8. How to adjust defrost cycle

In case there is excessive frost, the parameters **FnC** = C-y, **idF** = 4 and **MdF** = 20 can be used to avoid frost.

### 9. How to adjust the humidity

The parameter **Fon** is used to adjust the humidity in the wine cellar. Higher **Fon** results in higher relative humidity. Use a separate hygrometer to monitor the humidity.

### 10. How to set alarm call

1) Speech notice will be sent to your phones when the cellar temperature is **ALU** higher or **ALL** lower than the set-point **Set**.

2) In order to test the call function, set parameters **Ald** = 0 and **dAO** = 0. After testing, set **Ald** = 60 and **dAO** = 23.

### 11. How to set low cellar temperature heater

The heater turns on at **SAA** minus **Shy**; the heater turns off at **SAA**.

#### NOTES:

- Use a forced air heater to warm up the wine cellar.
- If there is a thermostat on the heater, bypass it or set the thermostat at the highest level.
- If the heater runs more than 10 A current, use a 120VAC coil contactor.

## 12. Electrical Wiring Diagram )

